

2017 National Geospatial Data Asset (NGDA) Dataset Report

Runways

Introduction:

This report aggregates information related to the National Geospatial Data Asset (NGDA) in the title above. In order to be designated an NGDA, the dataset must meet the criteria outlined in the Office of Management and Budget [OMB Circular A-16 Supplemental Guidance](#). The guidance also directs Federal agencies to implement and use a portfolio management approach to ensure NGDA Datasets are managed by officially designated agencies, on behalf of all users, as national capital assets. As part of this process, the NGDA Dataset Managers regularly assess the maturity of their NGDA Datasets based on the [geospatial data lifecycle](#) and agency business requirements. All NGDA Datasets are assessed uniformly using a set of benchmark questions and a maturity index. This report includes results from the 2017 Lifecycle Maturity Assessment (LMA) which will be used to inform NGDA Dataset Managers about priorities and will be aggregated into a Theme Summary Report for NGDA Theme Leads.

NGDA Dataset Details:

Official Title: Runways (National)

Metadata Record Title*: [Runways \(National\) - National Geospatial Data Asset \(NGDA\) Runways](#)

Theme: Transportation

Dataset Lead Agency: U.S. Department of Transportation, Federal Aviation Administration

Theme Executive Champion(s):

Name: To be determined
Agency:
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Theme Lead(s):

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* If the metadata has been updated and re-harvested after publication of this report, the link may no longer be valid. The NGDA Dataset may be searched for manually in Data.gov or GeoPlatform.gov using the metadata record title.

2017 Lifecycle Maturity Assessment (LMA)

Reporting on the status of each NGDA Dataset is an OMB requirement, and assessing the developmental maturity of the NGDA provides managers the ability to support NGDA Datasets in a more universal and transparent manner. The LMA is based on the OMB Circular A-16 seven stages of the [geospatial data lifecycle](#) with associated benchmark activities for each stage. Each benchmark has a range of activities, from no activity to significant activity, which provide the interpretation of maturity for that benchmark. The cumulative level of activity determines the maturity of the each NGDA Dataset and is based on a [Maturity Matrix](#) and [How to Calculate Maturity](#). Additional information can be found at the GeoPlatform.gov [2017 Lifecycle Maturity Assessment \(LMA\)](#) community web page.

2017 LMA Questions and Responses

The 2017 LMA includes a series of questions about the benchmark activities within each lifecycle stage, an explanation of specific actions that might be used to accomplish the benchmark activity (clarifying statements), and a series of status metrics in the form of response options. The NGDA Dataset Manager selects the response option that most accurately describes the current maturity level for the NGDA they manage. The responses to all the questions, and their associated metrics, collectively determine the overall maturity of an individual NGDA. The 2017 LMA consists of 3 general questions and 20 maturity questions. An additional 12 questions justify response choices to the 20 maturity questions. The questions are organized across the seven stages of the [geospatial data lifecycle](#) or pertain to all lifecycle stages. The detailed 2017 LMA questions can be found in the [National Geospatial Dataset Asset 2017 Lifecycle Maturity Assessment](#) document.

General Questions for All Stages

0) Part 1: Is this dataset considered "active" or "static"?

Response: The dataset is considered active - the dataset is being actively updated and maintained and has active components in some or all of the 7 Lifecycle Stages (with the exception of the Archival Stage)

0) Part 2: For the 2017 LMA, please provide what time frame the assessment includes?

Response: For an NGDA that completed the baseline assessment, responses include dataset activities from 2015 to 2017

0) Part 3: Do you have a process to evaluate the dataset to determine if it continues to meet the criteria established for a National Geospatial Data Asset (NGDA)?

Response: Yes

1) Is there a recurring process to obtain funding for all lifecycle stages of this dataset?

Response: Funding support exists but is not adequate to meet known requirements, most lifecycle stages are supported

1.a) To justify your response to Question 1, what is the primary funding source for your NGDA?

Response: Other

Other: The Federal Aviation Administration's Office of Airports collects data utilizing recurring processes defined in FAA Order 5010.4: Airport Safety Data Program and Advisory Circular 150/5300-18: General Guidance and Specifications for Aeronautical Surveys: Airport Survey Data Collection and Geographic Information System Standards . This program is defined through funding requests updated and submitted annually, governed by 49 U.S. Code SS 47130 - Airport safety data collection. These programs are managed

by the Federal Government, with additional contract support utilized as needed. The information obtained can be accessed through the FAA's National Flight Data Center who stores, maintains, disseminates and archives the data for public consumption.

http://www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.current/documentNumber/150_5300-18

https://www.faa.gov/regulations_policies/orders_notices/index.cfm/go/document.information/documentID/8422

1.b) To further justify your response to Question 1, do you have secondary source(s) of funding?

Response: No

2) Is there a process in place to ensure that open government and transparency guidelines are followed in all lifecycle stages for this dataset?

Response: Implementation progressing with respect to sensitivity requirements

3) Are there processes and tools in place so that staff are sufficiently knowledgeable to ensure the continuity of the dataset for all stages of the lifecycle, especially during staffing transition?

Response: Fully implemented including recurring assessments

STAGE 1 - Define/Plan

Characterization of data requirements based upon business-driven user needs.

4) Are business requirements defined and formalized?

Response: Fully implemented including recurring assessments

5) Are there processes in place to ensure partners and stakeholders are involved in requirements collection?

Response: Fully implemented including recurring assessments

5.a) To justify your response to Question 5, which external partners and stakeholders are involved in the requirements collection process?

Federal agency - Partners and stakeholders are participants from other federal agencies

State government - Partners and stakeholders are participants from state governments

Local government - Partners and stakeholders are participants from local governments

International - Partners and stakeholders are participants from international governments or organizations

Academia - Partners and stakeholders are participants from academic institutions

Professional association - Partners and stakeholders are participants from professional associations

Private sector - Partners and stakeholders are participants from private sector organizations

Other - FAA data users actively participate in setting the data requirements. They also submit requests for data and attribute enhancements. The aviation industry make requests through the Aeronautical Charting Forum which meets twice a year. It is likely that a data change control board will be established as the data becomes digitized and more geospatial. The Aeronautical Information Products and Services Community of Interest - AIPS COI was created as a new governance body to obtain additional information.

6) Is there a quality assurance process for the dataset?

Response: Fully implemented including recurring assessments

6.a) To justify your response to Question 6, what methods are used to develop and complete quality assurance assessments?

Internal quality assurance assessment - A defined review process is undertaken by agency personnel through quality evaluation, testing, or other manual or automated methods

External quality assurance assessment - Third-party organizations undertake a quality review or evaluation. This can be partners, stakeholders, and/or users reviewing the dataset to assure that requirements are being met

Other - Quality policy: The National Flight Data Center (NFDC) commits to providing quality aeronautical information and services that enable our customers to effectively plan and safely operate within the national airspace system (NAS). NFDC achieves this goal by continually improving the timeliness and accuracy of its information and processes. Quality assurance begins by placing controls on external providers of aeronautical data. These data providers are vetted against authorized lists and prevented from submitting data sets that are outside their authority. Public submitters of data receive additional vetting to ensure they are legitimate sources. Data submitted is validated by aeronautical specialists before entering into NFDC's authoritative data systems. Additional quality assurance checks are built into NFDC's data systems to prevent potential errors and conflicts of data. NFDC meets its customers' expectations by monitoring and controlling its ability: a) to process Aeronautical Data Changes (ADC) and Aeronautical Chart Changes (ACC) requests received within cutoff dates for the AIRAC cycle, b) to meet average processing times for Aeronautical Data Change (ADC) and Aeronautical Chart Changes (ACC) requests, c) to process Flight Inspection Data Exchange (FIDEX) within a given time, and, d) to correctly calculate Instrument Landing Systems (ILS) published in the National Flight Data Digest (NFDD) during a given production cycle. NFDC is required to have a quality management system per the International Civil Aviation Organization's (ICAO) annex 15. NFDC has implemented a quality management system (QMS) based on the ISO 9001:2008 standard and has received a certificate of registration from a third party registrar. NFDC's QMS requires the planning and implementation of quality assurance activities. The certificate of registration provides evidence that NFDC has implemented quality assurance activities. Some examples of quality assurance activities were provided in the answers for question 6. Examples of external quality assurance include publishing proposed data for public review and using FAA's flight inspection organization to validate some data types. Data inquiries or changes found by external quality assurance activities are submitted to NFDC through its public portal.

7) Has an assessment been done to evaluate the sensitivity, privacy, and confidentiality of this dataset?

Response: Fully implemented including recurring assessments

8) Are defined data standards used in collecting, processing, and/or rendering the data?

Response: Fully implemented including recurring assessments

8.a) To justify your response to Question 8, what types of data standards are used in collection, processing, and/or rendering the data?

Standards not endorsed by FGDC in use: The Federal Aviation Administration's Office of Airports defines standards used in collecting and processing data through guidance provided in FAA Advisory Circular 150/5300-18: General Guidance and Specifications for Aeronautical Surveys: Airport Survey Data Collection and Geographic Information System Standards . The data is not rendered for use in any geospatial capacity by the Office of Airports. All data gathered under this guidance is processed by the National Flight Data Center who disseminates and archives the data for public consumption.

http://www.faa.gov/airports/resources/advisory_circulars/index.cfm/go/document.current/documentNumber/150_5300-18

STAGE 2 - Inventory/Evaluate

The creation and publication of a detailed list of data assets and data gaps (both internal and external) as they relate to business-driven user need.

9) Is an assessment done to determine if data necessary to meet requirements already exists from other sources (either within or outside the agency) before collecting or acquiring new data?

Response: Fully implemented including recurring assessments

9.a) To justify your response to Question 9, what actions are performed to determine if data already exists from other sources?

Internal research and evaluation - The lead federal agency conducts research to identify whether other potential sources and datasets exist, including GeoPlatform.gov Marketplace research

External research and evaluation - External stakeholders and partners conduct research to identify whether other potential sources and datasets exist

Suitability review of datasets - Datasets identified that may meet mission requirements undergo suitability review or testing

Data accuracy review - Datasets identified that may meet mission requirements undergo more extensive accuracy review or testing

Use limitations/restrictions review - Datasets identified that may meet mission requirements undergo use limitations or restrictions review

Financial cost/impacts evaluation - Datasets identified that may meet mission requirements undergo review for potential financial costs or savings

Other - The U.S. Department of Transportation's Planned Geospatial Data Acquisitions policy (February 2014) establishes procedures to eliminate unnecessary efforts. Specifically, no office may collect or produce geospatial data if a dataset that meets the office's needs already exist. Below is section four of the policy. It defines the Department's data acquisition procedures. 4. In order to avoid duplication of geospatial data acquisitions, offices and operating units within the Department shall not expend funds to acquire or produce geospatial data if an existing source for that data is available and meets mission requirements. Offices shall coordinate with other organizations, whether within or outside of the Department, if it is determined another organization is planning on acquiring or producing data that will meet the needs of the office as soon as possible, but no later than 30 days prior to the planned acquisition. 4.1. Before expending funds to collect or produce new geospatial data each office will search the officially designated National Spatial Data Clearinghouse and any other appropriate sources to determine if existing data meets agency needs. The office shall also search any Federal Geographic Data Committee (FGDC)-approved clearinghouse(s) containing references to planned geospatial data acquisitions as soon as the need for the data arises. 4.2. The office shall document the date, clearinghouse(s) searched, search criteria and results of that search. 4.3. If the office discovers/identifies geospatial data from another organization that is appropriate for the office use, the office shall obtain and use that existing geospatial data. 4.4. If the office discovers/identifies through the search required by Section 4.01 above that another organization has plans to acquire or produce geospatial data that is appropriate for use by the office, the office shall contact that organization and develop a plan to coordinate or partner with the other office as appropriate. They can share in the cost by including an Interagency Agreement to transfer the funding to the sponsoring agency. 4.5. If the office does not discover/identify existing or planned acquisitions of appropriate geospatial data, the office shall create a metadata record following FGDC requirements for metadata that describes the planned acquisition. The office shall publish the metadata to the appropriate National Spatial Data designated Clearinghouse(s). 4.6. If the office is contacted by an organization that is interested in the planned acquisition for geospatial data, the office shall coordinate with the organization to avoid

duplication of the geospatial data acquisitions. 4.7. Upon request, the offices shall report to the Department Senior Agency Official for Geospatial Information (SAOGI) and Geospatial Coordination Council on activities related to this policy.

STAGE 3 - Obtain

The collection, purchase, conversion, transformation, sharing, exchanging, or creation of geospatial data that were selected to meet the business needs is identified.

10) Is there a process for obtaining data for this dataset?

Response: Fully implemented including recurring assessments

10.a) To justify your response to Question 10, what actions are performed to obtain data?

Obtain data by sharing/exchanging

Obtain data by creating and/or collecting the data

Other - The process for airports reporting this data is codified in Order 5010.4A Airport Data and Information Management and guidance to Airports are provided in Advisory Circular (AC) 510/5300-19 Airport Data and Information Program. Both the order and AC have just been recently updated in a long term formal process. The financial support for the Office of Airport supplemental data collection is funded under a grant in our Airport Improvement Program enabling legislation; 49 U.S. Code SS 47130 - Airport safety data collection

11) Is the metadata in an FGDC-endorsed geospatial metadata standard, follows the NGDA Metadata Guidelines, and is published?

Response: Published and fully implemented NGDA Metadata Guidelines including recurring assessment of the metadata

12) Part 1: Is there a business process in place to determine the geographic coverage of the dataset and establish milestones to track progress towards completion?

Response: Fully implemented including recurring assessments

12) Part 2: Based on the business requirements, what is the estimated completeness of the geographic coverage?

Response: Geographic coverage is fully complete (100%) based on business requirements

12.a) To justify your response to Question 12 Part 2, what is the geographic coverage of the dataset as defined by the business requirements?

Response: US 50 States coverage (All) - Geographic coverage is the entire surface of the 50 States at the applicable resolution(s)

STAGE 4 - Access

Making data produced known and retrievable to the community through documentation and discovery mechanisms so the users can meet their business requirements.

13) Do you provide users access to the data in a digital machine-readable format?

Response: Fully implemented including recurring assessments

13.a) To justify your response to Question 13, what types of digital machine-readable formatted web services or data download services are available for this dataset?

- ArcGIS Feature Server
- ArcGIS Map Server
- KMZ/KML - Keyhole Markup Language
- WFS - Web Feature Service
- SHP - Shapefile
- ASCII - American Standard Code for Information Interchange
- MS - Excel with XYZ values
- CSV with XYZ values

STAGE 5 - Maintain

The ongoing processes and procedures to ensure that the data meet business requirements.

14) Is there a maintenance process in place for this dataset?

Response: Fully implemented including recurring assessments

15) Is there a quality assurance/quality control (QA/QC) process as part of this dataset's maintenance?

Response: Fully implemented including recurring assessments

STAGE 6 - Use/Evaluate

The ongoing assessment, validation, and potential enhancement of data to meet user needs and business requirements.

16) Is there a process to determine if the dataset meets user needs?

Response: Implementation progressing

17) Is there a process to provide users information on how to evaluate and properly use the dataset?

Response: Fully implemented including recurring assessments

18) Do the business processes and management practices include an assessment of changing technology?

Response: Fully implemented including recurring assessments

STAGE 7 - Archive

Facilitate the selection/appraisal retention, storage, preservation and accessibility of geospatial content with long-term value (or the disposition of material as appropriate) and establish mechanisms for the coordinated development of stewardship tools and services across all impacted Federal agencies.

19) Is there an archiving appraisal process for the dataset?

Response: Fully implemented including recurring assessments

19.a) To justify your response to Question 19, where is digital data being archived as determined by your appraisal process outcome?

- Archived at an archive facility (NARA approved)
- Stored locally
- Other - This dataset is archived in the National Transportation Library annually.

19.b) To justify your response to Question 19, where is printed data being archived as determined by your appraisal process outcome?

No printed data is available to archive for this dataset

LMA Submission and Reviewer Information

LMA Submission:

Status: Complete

Date: 8/4/2017

Submitted by:

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Date: 4-Aug-17

LMA Maturity Overview

Each of the 20 maturity question responses was assigned a maturity level based on a [Maturity Matrix](#). The maximum level of maturity (Optimized; Established) is level (5) and the least level of maturity (No Activity) is level (0). The question response maturity was then averaged across each lifecycle stage to determine the stage maturity as described in [How to Calculate Maturity](#). The table below shows the numerical maturity levels with their corresponding descriptions and characteristics.

Maturity	Maturity Characteristics for All Lifecycle Stages
Optimized; Established Level = 5	Dataset meets virtually all business needs of all users. The dataset is considered authoritative by owners and secondary users. It is curated across all stages of the approved lifecycle. Future needs are defined for both the primary owner and secondary users on a regular basis and resources for addressing both current and future business requirements are available.
Mature; Consistent Level = 4	Dataset meets all the business needs of the primary owner and most of the secondary users. The dataset is curated and used as an authoritative resource by the primary owner and secondary users. Future needs are being identified and steps are planned to address these. All stages are supported and reviewed on a recurring basis. The dataset is well managed in relation to the approved lifecycle.
Managed; Predictable Level = 3	Dataset meets a significant number of the business needs of the primary owner and is widely used by secondary users. Benchmark activities are occurring in at least four of the approved lifecycle stages. Management practices in relation to the approved lifecycle is moderate but consistent. Dataset is integrating changing business requirements in lifecycle stages impacting overall maturity.
Transition; Transformation Level = 2	Dataset meets business needs of the primary owner and has moderate use by secondary users. Benchmark activities are occurring in at least three stages. Efforts to integrate funding, include partners, and obtain data are not supported in a sustained manner. Management practices in relation to the stages of the approved lifecycle is limited.
Planned; Initial Development Level = 1	Dataset in initial planning or limited in meeting business needs of the primary owner. Benchmark activities in the approved lifecycle are just starting to consider secondary uses, Partners/stakeholders involvement is being defined and developed to support additional dataset uses. Dataset development is in a very early stage. Minimal or limited management against the benchmarks in the approved lifecycle.
No Activity Level = 0	Dataset not developed or meets project/local business needs of the primary owner. Secondary, additional uses, or partners/stakeholders were not considered. Dataset is not recognized as authoritative data or is part of a similar dataset. Not managed to any of the benchmarks in the approved lifecycle.

Table 1: 2017 Maturity Matrix.

2017 NGDA Dataset Maturity Results

Based on the maturity question responses, an overall maturity level was calculated for this NGDA, along with maturity calculations for the general questions for all stages and each discrete lifecycle stage as shown in Table 2 below.

Maturity Categories	Maturity Level
Overall NGDA Maturity	5 - OPTIMIZED; ESTABLISHED
General Questions for All Stages	4 - Mature; Consistent
Stage 1: Plan/Define	5 - Optimized; Established
Stage 2: Inventory/Evaluate	5 - Optimized; Established
Stage 3: Obtain	5 - Optimized; Established
Stage 4: Access	5 - Optimized; Established
Stage 5: Maintain	5 - Optimized; Established
Stage 6: Use/Evaluate	4 - Mature; Consistent
Stage 7: Archive	5 - Optimized; Established

Table 2: 2017 Maturity Results.

LMA Process Changes Between 2015 and 2017

In 2015, a baseline assessment of National Geospatial Data Assets (NGDA) was performed for each of the NGDA Datasets in the federal geospatial portfolio. Information related to the 2015 baseline LMA can be found at [2015 NGDA Lifecycle Maturity Assessment](#), which also includes a link to the 2015 Reports. A follow up analysis of the 2015 LMA baseline process and its results identified ways to improve the LMA workflow, increase efficiency as well as decrease reporting burden. Several recommendations were identified and implemented in 2017, which included improvements to normalize the responses in 2017. A secondary effect of improvements to normalization is that results from 2017 and 2015 are not directly comparable. These changes, and their impacts, are detailed in the webpage: [Temporal Changes in Lifecycle Maturity Assessment \(LMA\) Maturity and Results Comparisons](#).